



Canada. Dept. of Agriculture
South Saskatchewan
River Dam

PROGRESS OF CONSTRUCTION

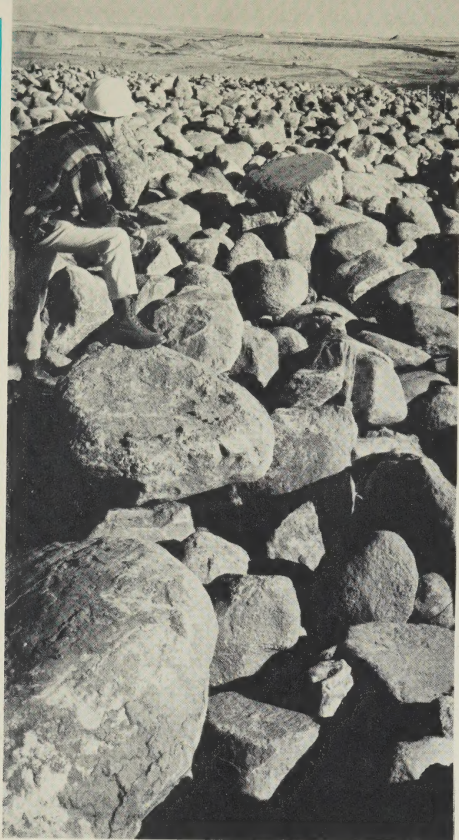
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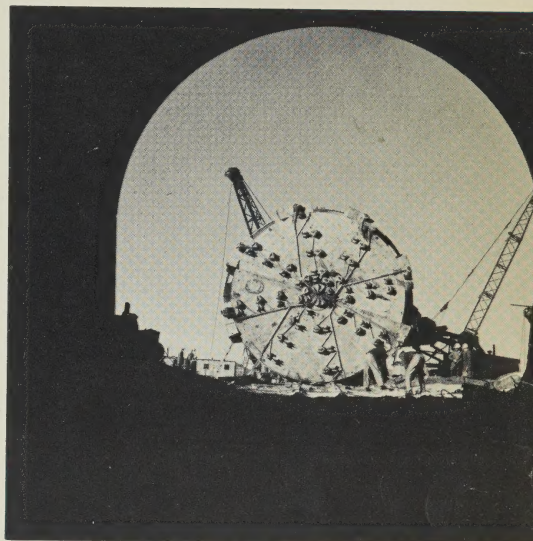
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SOUTH SASKATCHEWAN RIVER DAM

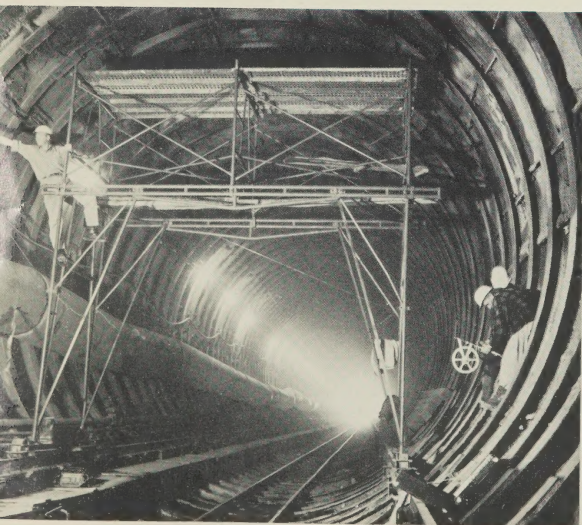
SUPPLEMENT NO. 1
1961-1962



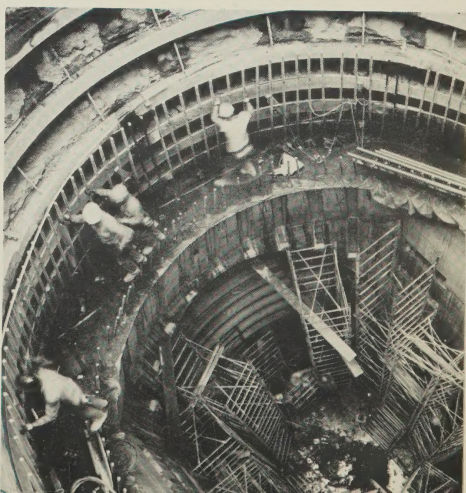
Acres of rock rip-rap picked from embankment and borrow pits.



"Mole" at diversion tunnel entrance.



Interior of diversion tunnel.



Interior of high level intake structure.



progress 1961 '62

The South Saskatchewan River Dam, situated midway between the south-central Saskatchewan towns of Outlook and Elbow, is in its fourth year of construction. Work began on the multi-purpose water conservation structure early in 1959, and has continued as a year-round operation since that time.

This dam is the largest of its type ever built in Canada, and is a joint venture between Canada and the Province of Saskatchewan. The purpose of the structure is to provide storage and stream flow regulation in the river, thus enabling full use of the water for irrigation, power development, domestic and urban water supply, flood control and recreation.

Under the agreement providing for development of the project, the Federal Government will pay the major portion of the cost of construction of the dam and creation of the reservoir, while Saskatchewan is responsible for all facets of development associated with making more efficient use of the water.

Charged with the task of constructing the principal water storage and control works is the Prairie Farm Rehabilitation Administration of the Federal Department of Agriculture, with headquarters in Regina. This agency assumes responsibility for all survey, planning, design and supervision of project construction. Under its direction, a total of 26 major construction contracts have been awarded to date, valued at approximately \$50 million. This represents just over half of the \$96 million estimated to fully construct the project. Of this amount, expenditures have reached \$32 million.

Thus far, work has been confined to construction of the dam on the South Saskatchewan River along with the building of access roads, highway revisions that will be inundated by the reservoir when the project is completed, and establishment of the PFRA construction headquarters at the damsite. At a later stage a second dam will be built in the Qu'Appelle River Valley, southeast of the town of Elbow, to control water flowing into the Qu'Appelle River system.

During 1961, work went forward on construction of the earth embankment for the dam and on the 5 river diversion tunnels which will carry the flow of the river around the construction area following final closure of the river, and which will be developed to deliver water to the hydro-electric plant to be built at the site. To date, earth work has involved the raising of the embankment to 50 per cent of its full height on either side of the river including a

section of the river channel itself. In addition, approximately 50 per cent of the earth work required in the construction of the embankment across Coteau Creek on the extreme west end of the dam has been completed. Also included in construction of the latter embankment is the excavation of a portion of the main spillway area which is now nearing completion.

The river diversion tunnels have involved three major phases of construction. These include the downstream portions of the 5 river diversion tunnels, the upstream sections of the 5 tunnels including the installation of high level intake structures, and excavation of the control shafts which extend vertically from the center line of the dam on the west embankment to where they intersect with the tunnels.

In the downstream tunnels mining is completed, the work being accomplished mainly with a type of mining equipment commonly known as the 'Mole'. This machine is power driven and is equipped with a rotary cutter head which chews its way through the abutment at a rate of 50 to 60 feet a day to produce a 25-foot tunnel. As the tunnel sections are completed, the walls are lined with steel reinforcing and concrete 2½ feet thick to leave a finished tunnel, 20 feet in diameter. On the up-stream tunnels, the inlet portals and high level intake structures have been completed and drilling of the tunnels proper is now in progress.

Construction of the control shaft substructures is also well advanced with excavation completed on all 5 shafts. Each shaft is approximately 40 feet in diameter and 225 feet deep. These structures are currently being reinforced with steel and lined with concrete in preparation for the installation of control gates and other equipment necessary to regulate the flow of water in the tunnels.

Other work in progress during the year included processing of concrete aggregate for tunnel and spillway construction, and the supply of cement for concrete to be placed in the tunnels. In connection with this operation over 1,250,000 tons of various grades and sizes of aggregate material have now been processed and stockpiled at the site.

During 1962 work will continue on the contracts presently in progress, and several others will be awarded involving a work force of approximately 1,300 men.

In addition to the contracts that will be required to complete construction of the South Saskatchewan River Dam, other major undertakings to be carried out include construction of the concrete chute spillway on the west side of the river, and construction of the Qu'Appelle Valley dam.

Prepared by Information Division,
Canada Department of Agriculture

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1962

| CONTRACT | PHASE INVOLVED | CONTRACTOR | AMOUNT OF CONTRACT |
|----------|--|-----------------------------------|--------------------|
| No. 1 | *East access road | Evans Construction Co. Ltd. | \$ 172,469.00 |
| No. 2 | *Aggregate processing | McNamara Limited | 812,030.00 |
| No. 3 | *Headquarters arteries construction | Beattie Ramsay Const. Co. Ltd. | 242,314.50 |
| No. 4 | *Headquarters buildings | Smith Bros. & Wilson Ltd. | 738,179.00 |
| No. 5 | *Bridge substructure | The Foundation Co. of Canada Ltd. | 339,354.00 |
| No. 6 | *East embankment (Stage 1) | Perini Limited | 2,941,380.00 |
| No. 7 | *North access road | Taylor Bros. | 168,680.60 |
| No. 8 | *Bridge superstructure | Bird Construction Co. Ltd. | 945,871.00 |
| No. 9 | *West embankment (Stage 2) | Piggott Construction Ltd. | 6,983,457.50 |
| No. 10 | *Headquarters water supply system | Beattie Ramsay Const. Co. Ltd. | 22,320.00 |
| No. 11 | *Headquarters pumping units | Canadian Fairbanks Morse Co. Ltd. | 12,026.00 |
| No. 12 | *Tourist pavilion | Bird Construction Co. Ltd. | 20,600.00 |
| No. 13 | Coteau Creek embankment (Stage 3) | Bedford Construction Co. Ltd. | 8,297,950.00 |
| No. 14 | Downstream diversion tunnels | Kiewit-Johnson-Poole | 8,064,175.00 |
| No. 15 | *Steel ring beams | Commercial Shearing Ltd. | 2,689,680.00 |
| No. 16 | *Revision highway No. 45 | Pedersen Construction Ltd. | 150,038.00 |
| No. 17 | *Revision highway No. 19 | Acorn Construction Ltd. | 256,105.00 |
| No. 18 | *Cement (downstream portals) | Canada Cement Co. Ltd. | 112,965.00 |
| No. 19 | *Relief wells and conduit | Piggott Construction Ltd. | 267,081.10 |
| No. 20 | *Gravel revision highway No. 45 | W. F. Bodkin Construction Ltd. | 14,895.00 |
| No. 21 | Upstream diversion tunnels | Kiewit-Johnson-Poole | 8,658,500.00 |
| No. 22 | Aggregate processing | McNamara Limited | 1,693,750.00 |
| No. 23 | *Gravel revision highway No. 19 | Nick Linden Construction | 40,800.00 |
| No. 24 | Cement (downstream tunnels) | Inland Cement Co. Ltd. | 618,750.00 |
| No. 25 | Control Shaft Substructures | Canada Cement Co. Ltd. | 412,500.00 |
| No. 26 | Revision Highway (Tichfield to No. 15) | Kiewit-Johnson-Poole | 4,903,750.00 |
| | | Sanderson & Elgert | 140,003.00 |

* Denotes completed contracts.

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